

Serial No. 10/660,690
Amendment dated February 22, 2007
Reply to Office Action of August 23, 2006

Docket No. K-0008REI

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Amended) A method for driving a plasma display panel, comprising

dividing row electrodes into a first [area] group of electrodes to be scanned and a second [area] group of electrodes to be sustained in a given time period;

simultaneously applying scan pulses and sustain pulses, wherein the scan pulses are applied successively to row electrodes of the first [area] group row by row, and wherein the sustain pulses are applied to row electrodes of the second [area] group and no scan pulses are applied to the row electrodes of the second group during the given time period; and

applying address pulses to data electrode in synchronization with a scan pulse.
2. (Pending) The method as claimed in claim 1, wherein the scan pulse is applied to the row electrodes to be scanned regardless of when the sustain pulse is applied.

3. (Pending) The method as claimed in claim 1, wherein the scan pulse and the data pulse are not applied to the row electrodes and data electrodes respectively when the sustain pulse has a rising edge.
4. (Pending) The method as claimed in claim 1, further comprising the step of: applying a stabilizing pulse to the data electrodes when the sustain pulse has a rising edge.
5. (Pending) The method as defined in claim 1, wherein address pulses are data to construct the sub-field of 640 scan lines bit by bit corresponding to a predetermined luminance, out of digital image data of eight bits.
6. (Pending) The method as defined in claim 5, wherein subfields formed with a combination of digital image data of bits different from those of a previous subfield are sequentially scanned seven times.
7. (Amended) The method as defined in claim 1, wherein the first [area] group is divided into at least two [sub-blocks] sub-groups, and the scan pulses are alternately applied to the at least two [sub-blocks] sub-groups.

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8. (Pending) A method of driving a plasma display panel having a plurality of first row electrodes in a first direction, a plurality of second row electrodes in the first direction, and a plurality of column electrodes in a second direction and a cell being defined near an intersection of each of the column electrodes with the first and second electrodes, comprising:

applying at least a first scan pulse and a first sustain pulse to at least one of the plurality of first row electrodes;

applying at least a second scan pulse and a second sustain pulse to at least one of the plurality of second row electrodes; and

applying at least one data pulse to at least one of the plurality of data electrodes.

9. (Pending) The method of claim 8, wherein at least one erase pulse is applied to at least one of the plurality of first row electrodes.

10. (Pending) The method of claim 8, wherein at least one erase pulse is applied to at least one of the plurality of second row electrodes.

11. (Pending) A method of driving a plasma display panel having a tri-electrode structure, comprising:

driving the tri-electrode structure based on division of a field into a prescribed number of areas, wherein each area includes at least eight sub-fields.

12. (Pending) The method of claim 11, wherein the prescribed number of areas is at least 2.

13. (Pending) The method of claim 11, wherein the prescribed number of areas is at least 4.

14. (Pending) The method of claim 11, wherein the prescribed number of areas equals $N \times P$, where N is number of blocks and P is $M \times$ a prescribed factor, M being a number of scan pulses in an address cycle and the prescribed factor being a natural number for increasing the number of scan pulses in the address cycle and the natural number being equal to at least one.

15. (Pending) A method of driving a plasma display panel, comprising:
dividing a field into at least two areas; and

driving each of the at least two areas based on a prescribed number of sub-fields SF_n, the prescribed number of sub-fields including a scan concentrated period, wherein the scan concentrated period of the at least two areas does not overlap.

16. (Pending) The method of claim 15, wherein the prescribed number of sub-fields SF_n is at least eight, and the scan concentrated period includes sub-fields 1 through 5.

17. (Pending) A plasma display device, comprising:
a plurality of first row electrodes formed substantially parallel to a plurality of second row electrodes in a first direction on a first substrate;
a plurality of column electrodes formed in a second direction on a second substrate; and
a plurality of cells, each cell being formed substantially near an intersection where each of the plurality of column electrodes intersect with corresponding first and second row electrodes, wherein
at least one of the plurality of first row electrodes is driven by applying at least a first scan pulse and a first sustain pulse, and
at least one of the plurality of second row electrodes is driven by applying at least a second scan pulse and a second sustain pulse.

18. (Pending) The plasma display device of claim 17, wherein neither the plurality of row electrodes nor the plurality of second row electrodes is commonly coupled to each other.

19. (Pending) The plasma display device of claim 17, wherein the cells are divided into at least two areas in the first direction.

20. (Pending) The plasma display device of claim 19, wherein each of at least two areas are driven based on at least 8 sub-fields.

21. (Pending) The plasma display device of claim 19, wherein at least one scan pulse is alternately applied between at least one first row electrode of a first area of the two areas and at least one second row electrode of a second area of the two area.

22. (Amended) A method of driving a plasma display panel having a plurality of data electrodes and a plurality of row electrodes, the plurality of row electrodes being divided into a first group of row electrodes and a second group of row electrodes, comprising:

- (a) applying scan pulses to the first group of row electrodes;
- (b) applying sustain pulses to the second group of row electrodes; and

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(c) applying address pulses to the data electrodes in relation to the scan pulses, wherein steps (a) and (b) are simultaneous, and wherein a first row electrode of the first group and a first row electrode of the second group comprise a pair of electrodes, and a cell is provided at each crossing of each address electrode and the pair of electrodes.

23. (Pending) The method of claim 22, wherein the scan pulse is applied the row electrode of the first group to be scanned regardless of when the sustain pulse is applied is applied to the row electrode of the second group.

24. (Pending) The method of claim 22, wherein input nodes of the first group are located near one side of the plasma display panel and input nodes of the second group are located near another side of the plasma display panel.

25. (Pending) A plasma display panel comprising:
a plurality of column electrodes in a first direction;
a plurality of row electrodes in a second direction; and
a plurality of cells, each cell being formed near an intersection of the row electrode and the column electrode, wherein

the plurality of row electrodes comprises a first group of row electrodes having signal input nodes near a first side of a plasma display area and a second group of row electrodes having signal input nodes near a second side of the plasma display area, the signal input nodes on the first side are configured to be driven by a first set of signals and the signal input nodes on the second side are configured to be driven by a second set of signals, each of the first and second sets of signals comprising at least one of (1) a scanning pulse and a sustaining pulse and (2) a write pulse and/or an erase pulse.

26. (Pending) The plasma display panel of claim 25, wherein the first and second set of signals are applied based on sub-fields using address while display scheme.

27. (Pending) The plasma display panel of claim 26, wherein each sub-field includes a sustain period and at least one of an address period and an erase period.

28. (Pending) The plasma display panel of claim 26, wherein the number of sub-fields is based on a gray scale of N units.

29. (Pending) The plasma display panel of claim 28, wherein N units equal 256.

30. (Pending) The plasma display panel of claim 25, wherein the first and second set of signals are applied based on sub-fields using address display separation scheme.

31. (Pending) The plasma display panel of claim 30, wherein each sub-field includes separate reset, address and sustain periods.

32. (Pending) The plasma display panel of claim 30, wherein the number of sub-fields is based on a gray scale of N units.

33. (Pending) The plasma display panel of claim 32, wherein N units equal 256.

34. (Pending) The plasma display panel of claim 25, wherein the first group of row electrodes includes even and odd row electrodes and the second group of row electrodes includes even and odd row electrodes.

35. (Amended) A method of driving a plasma display panel having a plurality of data electrodes and a plurality of row electrodes, and the plurality of the row electrodes being divided into a first group of row electrodes and a second group of row electrodes, comprising:

applying at least one of sustain, write or erase pulses to the second group of row electrodes;

applying scanning pulses to the first group of row electrodes; and

applying data pulses to the data electrodes in relation to the scanning pulses, wherein a first row electrode of the first group and a first row electrode of the second group comprise a pair of electrodes, and a cell is provided at each crossing of each address electrode and the pair of electrodes.

36. (Pending) The method of claim 35, wherein the scan, sustain, write and/or erase pulses are applied based on sub-fields having a sustain period, an address period and/or an erase period.

37. (Pending) The method of claim 36, wherein the number of sub-fields is based on a gray scale of N units.

38. (Pending) The method of claim 37, wherein N units equal 256.

39. (Pending) The method of claim 35, wherein input nodes of the first group are located near one side of the plasma display panel and input nodes of the second group are located near another side of the plasma display panel.

40. (Pending) The method of claim 35, wherein the scan, sustain, write and/or erase pulses are applied based on sub-fields, each sub-field having a separate reset period, a separate address period and/or a separate sustain period.

41. (Pending) The method of claim 40, wherein the number of sub-fields is based on a gray scale of N units.

42. (Pending) The method of claim 41, wherein N units equal 256.

43. (New) The method of claim 22, wherein the first group of row electrodes is divided into a plurality of first sub-groups and the second group of row electrodes is divided into a plurality of second sub-groups.

44. (New) The method of claim 24, wherein the input nodes of the first group are not commonly connected to one another.

45. (New) The method of claim 44, wherein input nodes of the second group are not commonly connected to one another.

46. (New) The method of claim 23, wherein the first group of row electrodes is divided into a plurality of first sub-groups and the second group of row electrodes is divided into a plurality of second sub-groups.

47. (New) The method of claim 39, wherein the input nodes of the first group are not commonly connected to one another.

48. (New) The method of claim 47, wherein input nodes of the second group are not commonly connected to one another.